



ATOP-R&D

Human Factors Newsletter # 04-11

May 22, 2004 – June 4, 2004

Note: The Human Factors Newsletter is accessible at:

http://www.hf.faa.gov/docs/508/docs/newsletters/newsletter_0411.pdf

Previous Human Factors Newsletters are accessible at:

<http://www.hf.faa.gov/newsletter.htm>

Beginning in July 2004, we'll be sending you an e-mail link to the online HF Newsletter instead of sending you a Word file attachment. During the transition period, we'll send you an e-mail with the HF Newsletter attached (as before) along with a link to the new online HF Newsletter. Please let me know if you have problems accessing the HF Newsletter via the provided link.

Technical Information:

The Civil Aerospace Medical Institute (CAMI) was recognized for its outstanding support of the NASA weather accident prevention program at the 2004 NASA Weather Accident Prevention Review. On June 3rd, Mr. Ken Larcher, the CAMI research team leader for the combined NASA/FAA project, represented CAMI and received the award. The NASA/FAA project drew the following recognition in a *New York Times* article describing the research effort:

Year in and year out, whether there are airline crashes or not, scores of people are hurt, and others are killed, by in-flight turbulence. The National Aeronautics and Space Administration and the Federal Aviation Administration hope they will soon have sensing systems that could give 90 seconds' or two minutes' warning to an airline captain. But what could an airliner do with that amount of time?

A research team consisting of FAA, NASA, airline and union representatives developed and executed a research program to answer the question posed in the article. NASA engineers had developed technology in radar and lidar (light detection and ranging) systems that showed promise to detect clear air turbulence. To continue engineering development of the system, NASA needed information on the warning time required by flight attendants to seat passengers and prepare the cabin for air turbulence.

The study was generated as a combined effort, with NASA supplying the project manager, technical support, funding and overall coordination. The FAA supported the effort by providing a principal investigator, facilities, data collection, data analysis, subjects, and technical and contract support. Airline participants in the study included flight attendant crews from United, Delta and US Airways. In addition, American Airlines and Jet Blue supported the study with equipment and staff members. Two flight attendant unions (the American Association of Professional Flight Attendants and the Association of Flight Attendants) supported the effort with planning and technical support. CAMI's 747 Aircraft Environmental Research Facility (AERF) was used, and data gathering equipment (video and flight attendant lap belt instrumentation) was provided by CAMI Biodynamics and Bioinformatics teams. The Oklahoma City Fire Department provided emergency medical service. The study used 80 test subjects hired under an FAA contract with ALCOM Technologies. Including the subjects, the team working on site totaled over 100 people. Due to security requirements at the Mike Monroney Aeronautical Center, all subjects and most of the team members had to be bussed into the Center and supplied with meals, shelter and restroom facilities during the 10 – 12 hour days that were spent on the ramp at the 747 AERF. The total operation of the project involved tremendous effort in planning, coordination and logistics.

The team successfully combined the efforts of this entire group of dedicated people to conduct a study that used three airline flight attendant teams to evaluate three different operational scenarios (after movie, during bistro – snack - meal, and during full meal service) using two different procedures to stow equipment and to seat occupants (standard practice and emergency). The study evaluated 18 test conditions in a three-day period. The tests provided a clear definition for the time required to prepare the cabin of a wide-body aircraft for clear air turbulence and will provide the NASA engineers with the target data needed for further development of warning equipment. The study also found that significant differences existed between the procedures used by the airlines, and concluded that a best practice review of procedures could benefit all airlines and improve passenger safety. Equally important to the study results was the outstanding cooperative attitude generated within this team. The study required hard work and cooperation from a diverse group of people – and that is what happened. Point of Contact: J. Whinnery, CAMI

ATC: On May 25-27, researchers from the NAS Human Factors Group performed weather scenario development at the William J. Hughes Technical Center's Research Development and Human Factors Laboratory. During this initial "shake-down", researchers refined TRACON traffic scenarios and Integrated Terminal Weather System weather scenarios to be used in an upcoming human-in-the-loop simulation. Along with the scenario development, researchers also evaluated weather scenarios on an auxiliary weather display. (E. Stein, WJHTC)

Remotely Operated Aircraft: CAMI scientist Kevin Williams attended the first annual workshop entitled "Human Factors of Uninhabited Aerial Vehicles" in Phoenix, AZ, May 24-25. The workshop brought together researchers from the military, government, and industry, who are interested in the rapidly expanding world of remotely operated aircraft. Presenters focused on current human factors research related to the control and maintenance of these aircraft. Break-out sessions focused on the identification of important areas for future research, as well as the

identification of training, selection, and certification issues. (K. Williams, CAMI)

Accident Intervention Strategies: Dr. Williams also attended a meeting of the Remaining Risk Joint Safety Analysis Team (RRJSAT), Cargo/Midair accident subgroup in Dallas, TX in May. The transition from a JSAT to an implementation team (JSIT) was started. Intervention strategies identified during the JSAT process were given feasibility ratings by the team. Initial focus is on cargo accident intervention strategies. An additional midair accident will be reviewed and analyzed by the JSAT team before beginning the implementation process for midair accident interventions. The next meeting of the JSAT/JSIT team is scheduled for July. (K. Williams, CAMI)

ATC: Sponsor representatives from the ATO and a representative from the Human Factors Research and Engineering Division (ATOP-R&D) participated in a review of the CAMI air traffic control human factors research program on May 26-27. Members of the Individual and Team Performance Requirements Group (I&TP RG) participated and supported the identification of future research requirements. (D. Schroeder, CAMI)

Alaska: On May 14th and 15th, Dr. Boquet and Ms. Detwiler collected data from an Anchorage general aviation maintenance facility to identify human factors issues unique to Alaskan maintenance. They also presented a lecture entitled “Are Alaskan Aircraft Accidents Really that Different from those in the Lower 48, and what is the Primary Cause of Alaskan Accidents” at the Alaskan Airmen’s Association 2004 Alaska State Aviation Conference and Trade Show in Anchorage, AK. (D. Schroeder, CAMI)

Electronic Flight Bag (EFB): Several significant activities related to Volpe EFB research have been completed. In December 2003 and January 2004, Volpe researchers Divya Chandra and Michelle Yeh conducted two more rounds of evaluations of their EFB usability assessment tool. The tools have evolved through a total of four evaluations and are now relatively mature. The EFB usability assessment tools are being presented in a variety of forums to the FAA, industry groups, and researchers. On April 20th, the FAA received an update on the research effort at a meeting in Washington, DC. During the same time frame, a presentation on the research was distributed to industry. The presentation described not only Volpe's evaluation tools, but also Volpe's process for conducting an evaluation to assist manufacturers interested in conducting their own in-house evaluations. Feedback from industry was obtained during a May 20th conference call. The manufacturers expressed interest in trying out the tools over the next few months. Some have already incorporated the tools into their design process, and others are considering how to do so. Volpe researchers made two presentations to pilot groups in May. One presentation (May 12th) was to flight-test pilots at MIT Lincoln Laboratory. The second presentation was to approximately 30 members of the International Federation of Airline Pilots Associations (IFALPA) in Boston, MA (May 21st). The Volpe research is mentioned in an article on EFBs in the June 2004 issue of Avionics Magazine. A paper on the effort has been accepted for presentation at the fall HCI Aero conference in Toulouse, France. (D. Chandra, VNTSC, T. McCloy, AAR-100)

*More information on human factors research can be found at
the FAA Human Factors (AAR-100) web site: <http://www.hf.faa.gov>*

Mark D. Rodgers
FAA (AAR-100)



June 7-11, 2004 – 2004 US/Europe International Aviation Safety Conference (FAA/JAA), Philadelphia, PA <http://www.jaa.nl/conference/20th/closing.html>

June 10, 2004 – FAA Human Factors Acquisition Working Group Meeting, Room 932, FOB10A, Wash., DC <mailto:glen.hewitt@faa.gov>

June 15-17, 2004 – SAE Digital Human Modeling for Design and Engineering Meeting, Oakland University, Rochester, Michigan <http://www.sae.org/calendar/aeromtgs.htm>

June 22-24, 2004 – Civil/Military ATM Conference, Warsaw, Poland
http://www.atca.org/event_items.asp

June 29-July 1, 2004 - Second Annual Workshop on Cognitive Systems: Human Cognitive Models in System Design Sandia National Laboratories and the University of New Mexico, Santa Fe, NM
http://www.sandia.gov/cog.systems/cognitive_workshop/index.htm

July 8, 2004 - Human Factors Tool Symposium, Orlando, Florida
<http://hfetag.dtic.mil/docs/NASA-Tools-Workshop.doc>

June 12-16, 2004 – National Cargo Security Council 2004 Annual Conference and Exhibition, Riviera Hotel & Casino, Las Vegas, NV <http://www.cargosecurity.com>

June 18, 2004 – Human Modeling Technology & Standards Committee Meeting, Troy, MI
lemon@sae.org

July 15, 2004 – Deadline for papers - 13th Annual Symposium on Aviation Psychology (ISAP), Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK, April 18-21, 2005..
<http://www.cami.jccbi.gov/>

July 19-25, 2004 – Farnborough International 2004, Farnborough Aerodrome, England
<http://www.farnborough.com/>

July 22-August 2, 2004 – 52nd Annual EAA AirVenture Fly-In, Wittman Field, Oshkosh, WI
[EAA AirVenture Oshkosh 2004](#)

July 27-August 2, 2004 – 52nd Annual AirVenture, Oshkosh, WI <http://airventure.org/>

July 28 – August 1, 2004 – 112th Convention of the American Psychological Association.
Honolulu, Hawaii <http://www.apa.org/convention>

August 1-4, 2004 – Designing Interactive Systems, Cambridge, MA
<http://www.sigchi.org/DIS2004/>

August 8-12, 2004 – 31st International Conference on Computer Graphics and Interactive Techniques, Los Angeles Convention Center, Los Angeles, CA
<http://www.vr.clemson.edu/eyetracking/etra/2004/>

August 16-19, 2004 - 6th Workshop on Risk Analysis and Safety Performance Measurements in Aviation, Crystal City, VA. <http://aar400.tc.faa.gov/AAR424/Workshop2004/>.

August 23-27, 2004 - SAE G-10 Human Behavioral Performance Committee Semiannual Meeting, Seattle, WA <http://www.sae.org/standardsdev/aerospace/g10tag.htm>

August 23-27, 2004 – Aircraft Instruments Meeting, Bellvue, WA elizd@sae.org

September 8-9, 2004 – Civil Aviation Safety Symposium 2004, Westin Hotel Galleria, Dallas, TX <http://www.asdnet.org/cass/default.htm>

September 14-17, 2004 – 22nd International Air Cargo Forum and Exposition, Basque Country, Spain <http://www.tiaca.org>

September 14-17, 2004 – National Cargo Security Council 2004 Conference & Exhibition, Riviera Hotel & Casino, Las Vegas, NV <http://www.cargosecurity.com>

September 16, 2004 – Aircraft Lighting Meeting, Nashville, TN elizd@sae.org

September 19-20, 2004 – Association for the Advancement of Medical Instrumentation AAMI/HE Human Factors Engineering Committee Meeting, New Orleans, LA
ntongson@aami.org

September 20, 2004 – Nondestructive Methods and Processes Committee Meeting, Albuquerque, NM kerrir@sae.org

September 20-24, 2004 – Human Factors and Ergonomics Society 48th Annual Meeting, Sheraton New Orleans Hotel, New Orleans, LA <http://www.hfes.org/>

September 27-29, 2004 – SAFE Association 42nd Annual Symposium, Grand America Hotel, Salt Lake City, UT <http://www.safeassociation.com/symposium.htm>

September 29 – October 1, 2004 – 2004 International Conference on Human Computer Interaction (HCI-Aero), Toulouse, France
<http://www.eurisco-international.com/hci-aero2004>.

October, 2004 – 18th Airbus/JetBlue Human Factors Symposium, New York City, NY
<http://www.airbus.com/customer/events.asp>

October 4-7, 2004 – SAE SEAT – Aircraft Seat Committee Meeting, Albuquerque, NM
mlemank@sae.org

October 5-7, 2004 – Aircraft Seat Committee Meeting, Albuquerque, NM
mlemank@sae.org

October 10-16, 2004 – ACM Multi-Media 2004, New York, NY <http://www.mm2004.org/>

October 12-14, 2004 – Shared Vision of Aviation Safety Conference, San Diego, CA
<http://www.aviationsafetyconference.com/index2.html>

October 12-14, 2004 – 57th Annual Business Aviation Association Meeting and Convention, Las Vegas County Convention Center, Las Vegas, NV <http://web.nbaa.org/public/cs/amc/>

October 13-15, 2004 – Sixth International Conference on Multimodal Interfaces, Penn State University, State College, PA <http://www.icmiplace.org/>

October 18-19, 2004 – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, DC <http://wwwsearch.nationalacademies.org/>

October 18-22, 2004 – AC-9 Aircraft Environmental Systems Meeting, Wichita, KS
mlemank@sae.org

October 19-20, 2004 – Aerospace Council Meeting, Toulouse, France
mlemank@sae.org

October 21-23, 2004 – Aircraft Owners and Pilots Association Expo 2004, Long Beach Convention and Entertainment Center, Long Beach, CA <http://www.aopa.org/expo/2003/virtual/>

October 23-27, 2004 – NordiCHI 2004, Tampere, Finland <http://www.cs.uta.fi/nordichi2004/>

October 24-27, 2004 – UIST 2004, 17th Annual ACM Symposium on User Interface Software and Technology, Santa Fe, NM <http://www.acm.org/uist/>

October 25-28, 2004 – SAE S-9 Cabin Safety Technical Committee Meeting, San Diego, CA
mlemank@sae.org

October 25-28, 2004 – DoD Maintenance Seminar and Exhibition, Hilton Americas, Houston, TX <http://www.sae.org/calendar/aeromtg.htm>

October 27-29, 2004 – Human Factors and Ergonomics Society Europe Chapter Annual Meeting, Delft University, the Netherlands

http://utopia.ision.nl/users/hfeseec/meeting/ec_meet.htm

October 27-29, 2004 – S-9 Cabin Safety Technical Committee Meeting,, San Diego, CA

mlemank@sae.org

October 31, 2004 – ATCA Annual Conference and Exposition, Marriott Wardman Park Hotel, Wash., DC http://www.atca.org/event_items.asp#

November 1-4, 2004 – DOD Human Factors Engineering Technical Advisory Group Meeting, Holiday Inn Select, Alexandria, VA <http://hfetag.dtic.mil/meetschl.html>

November 2-4, 2004 – World Aviation Conference, Hilton Hotel, Reno, NV

<http://www.sae.org/events/wac/>

November 4-5, 2004 – Royal Aeronautical Society Seminar Human Factors Training in Aviation Maintenance, RAF Bentley Priory, Stanmore, near Watford, North London

<http://www.raes-hfg.com/xmhfttraining.htm>

November 8-9, 2004 – European Aviation Training Symposium, Vienna, [Austria](#)

<http://www.at-events.com/eats/conference.asp>

November 15-18, 2004 – 57th Annual International Air Safety Seminar (“Sharing Knowledge to Improve Safety”), Pudong Shangri-La Hotel, Shanghai, China

<http://www.flightsafety.org/seminars.html>

January 9-13, 2005 – TRB 84th Annual Meeting, Washington, DC <http://trb.org/calendar/>

January 25-27, 2005 – AE-2 Aerospace Lighting Committee Meeting, New Orleans, LA

elizd@sae.org

January 28, 2005 – Deadline for papers - 6th USA/Europe ATM Seminar, Baltimore, MD, June 2005 <http://atmseminar.eurocontrol.fr/>

April 11-15, 2005 – SAE 100th Anniversary World Congress, Cobo Hall, Detroit, MI

<http://www.sae.org/congress/about/news/congressdates.htm>

April 17-22, 2005 – International Federation of Air Traffic Controller’s Associations, Melbourne, Australia http://www.ifatca.org/conferences/annual_conference.htm

April 18-21, 2005 – 13th International Symposium on Aviation Psychology (ISAP), Civil Aerospace Medical Institute (CAMI), Oklahoma City, OK (note: call for papers deadline is July 15, 2004). <http://www.cami.jccbi.gov/>

May 9-12, 2005 - 76th Annual Scientific Meeting of the Aerospace Medical Association, Kansas City, MO <http://www.asma.org/>

June 2005 – 6th USA/Europe ATM Seminar, Baltimore, MD (note: call for papers deadline is January 28, 2005) <http://atmseminar.eurocontrol.fr/>

August 18-21, 2005 - 113th Convention of the American Psychological Association, Wash, DC <http://www.apa.org/convention>

September 12-16, 2005 – Interact 2005, Tenth IFIP TC13 International Conference on Human-Computer Interaction, Rome, Italy <http://www.interact2005.org/>

September 26-30, 2005 – Human Factors and Ergonomics Society 49th Annual Meeting, Royal Pacific Resort at Universal Orlando, Orlando, FL <http://hfes.org/meetings/menu.html>

October 3-6, 2005 – SAE 2005 AeroTech Congress and Exhibition, Gaylord Texan Resort and Convention Center, Dallas/Fort Worth Airport Area, Texas
<http://www.sae.org/events/conferences/aerospace/>

October 24-25, 2005 – National Academies Institute of Medicine Annual Meeting, National Academy of Sciences, Washington, *DC* <http://wwwsearch.nationalacademies.org/>

January 22-26, 2006 – TRB 85th Annual Meeting, Washington, DC <http://trb.org/calendar/>

Note: Calendar events in Italics are new since the last Newsletter



Comments or questions regarding this newsletter?
Please contact Bill Berger at (334) 271-2928
or via e-mail at bill.ctr.berger@faa.gov